FORM PTO-1449/A and B (Modified)

Sheet

**USCLOSURE** \*\*PLICANT

10

FILING DATE:

July 25, 2003

ATTY. DOCKET NO.: C1039.70079US00

**CONFIRMATION NO.: 3204** 

APPLICANT:

Arthur M. Krieg, et al.

GROUP ART UNIT: 1648

EXAMINER: Le, Emily M.

**U.S. PATENT DOCUMENTS** 

APPLICATION NO.: 10/627,413

Examiner's	Cite	U.S. Patent Docu		Name of Patentee or Applicant of Cited	Date of Publication or of issue of Cited Document MM-DD-YYYY	
Initials	No.	Number	Kind Code	Document		
le	*	3,906,092		Hilleman et al.		
Ĭ	*	5,248,670		Draper et al.	09-28-1993	
	*	5,585,479		Hoke et al.	12-17-1996	
	*	5,663,153		Hutcherson et al.	09-02-1997	
	*	5,723,335		Hutcherson et al.	03-03-1998	
	*	5,786,189		Locht et al.	07-28-1998	
	*	5,849,719		Carson et al.	12-15-1998	
	*	6,194,388	B1	Krieg et al.	02-27-2001	
	*	6,207,646	<b>B</b> 1	Krieg et al.	03-27-2001	
	*	6,214,806	Bl	Krieg et al.	04-10-2001	
	*	6,218,371	<b>B</b> 1	Krieg et al.	04-17-2001	
	*	6,225,292	B1	Raz, et al.	05/01/2001	
	*	6,239,116	B1	Krieg et al.	05-29-2001	
	*	6,339,068	Bi	Krieg et al.	01-15-2002	
	*	6,406,705	B1	Davis et al.	06-18-2002	
	*	6,429,199	B1	Krieg et al.	08-06-2002	
	*	6,498,148	Bl	Raz	12/24/2002	
	*	6,514,948	BI	Raz, et atl	02/04/2003	
	*	6,534,062	B2	Krieg, et al.	03/18/2003	
	*	6,552,006	B2	Raz et al.	04/22/2003	
	*	6,562,798	Bl	Schwartz	05/13/2003	
	*	6,589,940	B1	Raz et al.	07/08/2003	
	*.	6,610,661	BI	Carson et al.	08/26/2003	
	*	6,653,292	B1	Krieg et al.	11/25/2003	
	*	US 2001/0046967	Al	Van Nest	11/29/2001	
	*	US 2002/0028784	Al	Van Nest	03/07/2002	
	*	US 2002/0055477	A1	Nest	05/09/2002	
	*	US 2002/0098199	A1	Nest et al.	07/25/2002	
	*	US 2002/0107212	A1 ·	Van Nest et al.	08/08/2002	
	*	US 2002/0142978	A1	Van Nest et al.	10/03/2002	
	*	US 2002/0156033	A1	Raz et al.	10/24/2002	
	*	US 2003/0049266	Al	Bratzler et al.	03/13/2003	
	*	US 2003/0050263	Al	Fearon et al.	03/13/2003	
	*	US 2003/0078223	A1	Krieg et al.	04/24/2003	
	*	US 2003/0092663	Al	Raz et al.	05/15/2003	
	*	US 2003/0109469	A1	Raz	06/12/2003	
$\Psi$	*	US 2003/0119773	Al	Carson et al.	06/26/2003	

\* US 2003/0129251 A1 Raz et al. 07/10/2003



FORM PTO	0-1449/A and B (M	1odifie	d)	APPLICATION NO.:	10/627,413	ATTY. DOCKET NO.: C1039.70079US00
	RMATION I			FILING DATE:	FILING DATE: July 25, 2003 CONFIRMATION NO.:	
STAT	EMENT BY	APP	PLICANT	APPLICANT:	Arthur M. Krieg, et	al.
Sheet	2	of	10	GROUP ART UNIT:	1648	EXAMINER: Le, Emily M.

### U.S. PATENT DOCUMENTS

Examiner's Initials	Cite No.	U.S. Patent Document	Name of Patentee or Applicant of Cited Document		Date of Publication or of issue of Cited Document MM-DD-YYYY
ele	*	US 2003/0133988	A1	Van Nest et al.	07/17/2003
1	*	US 2003/0143213	Al	Fearon et al.	07/31/2003
	*	US 2003/0147870	Al	Raz et al.	08/07/2003
	*	US 2003/0175731	Al	Raz et al.	09/18/2003
	*	US 2003/0186921	Al	Rearon et al	10/02/2003
	*	US 2003/0199466	A1	Fearon et al.	10-23-2003
	*	US 2003/0212028	Al	Raz et al.	11-13-2003
7	*	US 2003/0216340	A1	Van Nest et al.	11-20-2003

### FOREIGN PATENT DOCUMENTS

Examiner's	Cite	For	eign Patent Docum	ient	Name of Patentee or Applicant of Cited  Document	Date of Publication of	Translation
Initials	No.	Office/ Country	Number	Kind Code	(not necessary)	Cited Document MM-DD-YYYY	(Y/N)
lh	*	GB	2216416A		Sandoz, Ltd.	11-10-1989	
	*	wo	WO 91/12811		ISIS Pharmaceuticals Inc.	09-05-1991	
	*	EPO	0468520 A3		Mitsui Toatsu Chemicals, Inc.	01-29-1992	
	*	wo	92/03456		ISIS Pharmaceuticals, Inc.	03-05-1992	
	*	wo	92/18522		The Salk Institute for Biological Studies	10-29-1992	
	*	wo	92/21353		Genta Incorporated	12-10-1992	
	*	EPO	0302758 81		New England Medical Center Hospitals, Inc.	03-16-1994	
	*	wo	94/19945		ISIS Pharmaceuticals Inc.	09-15-1994	
	*	wo	95/05853		Regents of the University of CA	03-02-1995	
	*	wo	95/26204		ISIS Pharmaceuticals Inc.	10-05-1995	·
	*	wo	96/02555		University of Iowa Research Foundation	02-01-1996	
	*	wo	96/35782		Applied Research Systems	11-14-1996	
	*	wo	97/28259		Regents of the University of California	08-07-1997	
	*	wo	98/14210		Regents of the University of California	04-09-1998	
	*	wo	98/16247		Regents of the University of CA	04-231998	
	*	wo	98/18810		University of Iowa Research Foundation	05-07-1998	
	*	wo	98/32462	Al	Wagner et al.	07-30-1998	
	*	wo	98/37919		University of Iowa Research Foundation	09-03-1998	
	*	wo	98/40100		Ottawa Civic Loeb Research Institute	09-17-1998	
*		WO 98/52581 (			Ottawa Civic Loeb Research Institute	11-26-1998	
* WO 98		98/55495	A2	Dynavax Tech. Corp.	03/11/1998		
	*	wo	99/11275	A2	Regents of the University of CA	03-11-1999	
	*	wo	99/62923	A2	Dynavax Tech. Corp	12/09/1999	
	*	wo	00/20039	Al	Regents of the University of CA	04/13/2000	

FORM PTC	)-1449/A and B (M	lodifie	d)	APPLICATION NO.:	10/627,413	ATTY. DOCKET NO.: C1039.70079US00	
	RMATION D			FILING DATE: July 25, 2003 CONFIRMATION NO.: 32		CONFIRMATION NO.: 3204	
STATEMENT BY APPLICANT				APPLICANT:	Arthur M. Krieg, et	et al.	
				GROUP ART UNIT:	1648	EXAMINER: Le, Emily M.	
Sheet	3	of	10	OROOF ART OWN.	1040	DAMMINER. Do, Emily IVI.	

#### FOREIGN PATENT DOCUMENTS

Examiner's Initials	Cite No.	Foreign Patent Document		ent	Name of Patentee or Applicant of Cited Document (not necessary)	Date of Publication of Cited Document MM-DD-YYYY	Translation (Y/N)
de	*	wo	00/21556	Al	Dynavax Tech Corp.	04/20/2000	
	*	WO	00/62781	Al	Regents of the University of CA	10/26/2000	
	*	WO	01/02007	Al	The Reagents of the Univ. of California	01-11-2001	
	*	wo	01/12804	A2	Hybridon, Inc.	02-22-2001	
	*	WO	01/12223	A2	Dynavax Tech. Corp.	02-22-2001	
	*	wo	01/55341	A2	The Reagents of the Univ. of California	08-02-2001	
	*	wo	01/68117	A2	Dynavax Tech. Corp.	09-20-2001	
	*	wo	01/68116	A2	Dynavax Tech. Corp.	09-20-2001	
	*	wo	01/68078	A2	Dynavax Tech. Corp.	09-20-2001	
	*	WO	01/68077	A2	Dynavax Tech. Corp.	09-20-2001	
V	*	wo	01/68103	A2	Dynavax Tech. Corp.	09-20-2001	

Examiner's	Cite	Include name of the author (in CAPITAL LETTERS) title of the article (when appropriate), title of the item	Translation (Y/N)				
Initials	No	publisher, city and/or country where published.					
	*	ADYA N et al., Expansion of CREB's DNA recognition specificity by Tax results from interaction					
•		with Ala-Ala-Arg at positions 282-284 near the conserved DNA-binding domain of CREB. Proc					
ile		Natl Acad Sci USA (1994) 91(12):5642-6.					
	*	AGRAWAL, et al., Pharmacokinetics of Antisense Oligonucleotides, Clin. Pharmacokinet (1995)					
1		28(1):7.					
	*	ANDERSON, G., et al. "TH2 and 'TH2-like' cells in allergy and asthma; pharmacological					
1		perspectives", <i>TiPS</i> , 15:324-332, (1994)	1				
	*	ANGIER, N., Microbe DNA Seen as Alien By Immune System, New York Times, 4/11/95.					
	*	AZAD RF et al., Antiviral Activity of a Phosphorothioate Oligonucleotide Complementary to RNA					
1.	1	of the Human Cytomegalovirus Major Immediate-Early Region, Antimicrobial Agents and					
		Chemotherapy, 37:1945-1954, September, 1993.					
	*	AZUMA, Biochemical and Immunological Studies on Cellular Components of Tubercle Bacilli,					
1	l	Kekkaku, (1992) Vol. 69, 9:45-55.					
	*	BALLAS ZK et al., Induction of NK activity in murine and human cells by CpG motifs in					
ľ	ľ	oligodeoxynucleotides and bacterial DNA. J Immunol (1996) 157(5):1840-5.	<u> </u>				
		BAYEVER, E., Systemic Administration of a Phosphorothioate Oligonucleotide with a Sequence					
1	ŀ	Complementary to p53 for Acute Myelogenous leukemia and Myelodysplastic Syndrome: Initial	1 1				
ł		Results of a Phase I Trial, Antisense Res. & Dev. (1993), 3:383-390.					
	+	BENNETT RM et al., DNA binding to human leukocytes. Evidence for a receptor-mediated					
· . \		association, internalization, and degradation of DNA. (1985) J Clin Invest 76(6):2182-90.					
	*	BERG DJ et al., Interleukin-10 is a central regulator of the response to LPS in murine models of					
1		endotoxic shock and the Shwartzman reaction but not endotoxin tolerance. J Clin Invest (1995)	1 1				
1	1	96(5):2339-47.	<u> </u>				
	*	BLANCHARD DK et al., Interferon-gamma induction by lipopolysaccharide: dependence on					
1)		interleukin 2 and macrophages. <i>J Immunol</i> (1986) 136(3):963-70.					
	*	BLAXTER et al., Genes expressed in Brugia malayi infective third stage larvae. Molecular and					

FORM PTO	)-1449/A and B (M	lodifie	d)	APPLICATION NO.:	10/627,413	ATTY. DOCKET NO.: C1039.70079US00
	RMATION I			FILING DATE: July 25, 2003 CONFIRMATION NO		CONFIRMATION NO.: 3204
STATEMENT BY APPLICANT				APPLICANT:	Arthur M. Krieg, et	al.
Sheet	4	of	10	GROUP ART UNIT:	1648	EXAMINER: Le. Emily M.

	T	OTHER ART — NON PATENT LITERATURE DOCUMENTS	<del></del>						
Examiner's	Cite	Include name of the author (in CAPITAL LETTERS) title of the article (when appropriate), title of the item	Translation (Y/N)						
Initials	No	(book, magazine, journal, serial, symposium, catalog, etc.), date, relevant page(s), volume-issue number(s), publisher, city and/or country where published.							
	<u> </u>		<u> </u>						
۵١.	*	BOGGS RT et al., Characterization and modulation of immune stimulation by modified	l İ						
<u>lle</u>		oligonucleotides. Antisense Nucleic Acid Drug Dev (1997) 7(5):461-71.							
1	*	BRANDA et al., Immune Stimulation by an Antisense Oligomer Complementary to the rev gene of							
		HIV-1, Biochemical Pharmacology, (1993) Vol. 45, 10:2037-2043.							
	*	BRANDA RF et al., Amplification of antibody production by phosphorothicate							
ł		oligodeoxynucleotides, J. Lab Clin Med (1996) 128(3):329-38.							
	*	BRISKIN M et al., Lipopolysaccharide-unresponsive mutant pre-B-cell lines blocked in NF-kappa B							
		activation, (1990) Mol Cell Biol 10(1):422-5.							
	*	CHACE, J. et al., Regulation of Differentiation in CD5+ and Conventional B Cells, Clinical							
ł		Immunology and Immunopathology, (1993) 68:3:327-332.							
	*	CHANG YN et al., The palindromic series I repeats in the simian cytomegalovirus major immediate-							
		early promoter behave as both strong basal enhancers and cyclic AMP response elements, J Virol	1 1						
i	1	(1990) 64(1):264-77.							
	*	CHU RS et al., CpG oligodeoxynucleotides act as adjuvants that switch on T helper 1 (Th1)	<del>  </del>						
	•								
<del></del>	*	immunity, (1997) J Exp Med 186(10):1623-31	<del></del>						
ı	, T	COSSUM et al., Pharmacokinetics of a 14C-Labeled Phosphorothioate Oligonucleotide, ISIS 2105,	1						
	<del> </del>	after Intradermal Administration toRats, J Pharmacol Exp Therapeutics (1993) 269(1):89.	<del> </del>						
ŀ	*	COWDERY JS et al., Bacterial DNA induces NK cells to produce IFN-gamma in vivo and increases							
<del> </del>	<del> </del>	the toxicity of lipopolysaccharides, J Immunol (1996) 156(12):4570-5.	<b></b>						
	*	CROSBY et al., The Early Responses Gene FGFI-C Encodes a Zinc Finger Transcriptional Activator							
		and is a Member of the GCGGGGCG (GSG) Element-Binding Protein Family, Mol. Cell. Biol.							
	1	(1991) 2:3835-3841.							
1	*	CRYSTAL, Transfer of Genes to Humans: Early Lessons and Obstacles to Success. Science, (1995)							
		Vol. 270, pp. 404-410.							
	*	D'ANDREA A et al., Interleukin 10 (IL-10) inhibits human lymphocyte interferon							
	10 0	gamma-production by suppressing natural killer cell stimulatory factor/IL-12 synthesis in accessory							
		cells, J Exp Med (1993) 178(3):1041-8.							
	*	ELKINS, K. L., Rhinehart-Jones, T. R., et al., "Bacterial DNA containing CpG motifs stimulates							
- 1		lymphocyte-dependent protection of mice against lethal infection with intracellular bacteria." J	1 1						
ľ		Immunol 162:2291-2298, 1999.	1 1						
	*	ENGLISCH et al., Chemically Modified Oligonucleotides as Probes and Inhibitors, Angew. Chem.							
1		Int. Ed. Engl (1991) 30:613-629.							
1	*	ERB KJ et al., Infection of mice with Mycobacterium bovis-Bacillus Calmette-Guerin (BCG)							
		suppresses allergen- induced airway eosinophilia, J Exp Med (1998) 187(4):561-9	1 1.						
	*	ETLINJER, Carrier sequence selection - one key to successful vaccines, <i>Immunology Today</i> , (1992)							
		Vol. 13, 2:52-55.							
** 1	*	FOX RI, Mechanism of action of hydroxychloroquine as an antirheumatic drug. Chemical Abstracts,							
		(1994) 120:15, Abstract No. 182630.							
	*	FREIDAG, B. L et al., "CpG oligodeoxynucleotides and interleukin-12 improve the efficacy of	<del>                                     </del>						
· ·		Mycobacterium bovis BCG vaccination in mice challenged with M. tuberculosis.: Infect Immun							
		68:2948-2953, (2000).							
	*	GAO, W-Y et al., Phosphorothioate oligonucleotides are inhibitors of human DNA polymerases and	<del>  -</del>						
	1	Rnase H: Implications for antisense technology. <i>Mol. Pharmacol.</i> (1992), 41, 223-229.							
-	*	GURA, T., Antisense Has Growing Pains. Science (1995), 270:575-576.	<del>                                     </del>						
	<del></del>								
<b>.</b>	*	HADDEN J et al., Immunopharmacology, JAMA, (1992) 268:20:2964-2969.	1 1						

FORM PTO	1449/A and B (M	lodifie	d)	APPLICATION NO.:	10/627,413	ATTY. DOCKET NO.: C1039.70079US00
	RMATION D			FILING DATE:	FILING DATE: July 25, 2003 CONFIRMATION NO.: 3204	
STATEMENT BY APPLICANT  Sheet 5 of 10			APPLICANT:	Arthur M. Krieg, et	al.	
			GROUP ART UNIT: 1648		EXAMINER: Le, Emily M.	
Sheet	Sheet 5 of 10					

Examiner's	Cite								
Initials	No	(book, magazine, journal, serial, symposium, catalog, etc.), date, relevant page(s), volume-issue number(s), publisher, city and/or country where published.	(YA	4)					
ele	*	HADDEN J et al., Immunostimulants. TIPS, (1993), 141:169-174.							
	*	HALPERN MD et al., Bacterial DNA induces murine interferon-gamma production by stimulation of interleukin-12 and tumor necrosis factor-alpha. <i>Cell Immunol</i> (1996) 167(1):72-8.							
	*	HATZFELD J., Release of Early Human Hematopoietic Progenitors from Quiescence by Antisense Transforming Growth Factor β1 or Rb Oligonucleotides, J. Exp. Med., (1991) 174:925-929.							
	*	HAYASHI, T.et al., "Enhancement of innate immunity against Mycobacterium avium infection by immunostimulatory DNA is mediated by indoleamine 2,3-dioxygenase." <i>Infect Immun</i> 69:6156-6164, (2001).							
	*	HIGHFIELD PE, Sepsis: the More, the Murkier. Biotechnology, (1994) 12:828.							
	*	HOEFFLER JP et al., Identification of multiple nuclear factors that interact with cyclic adenosine 3',5'-monophosphate response element-binding protein and activating transcription factor-2 by protein-protein interactions., (1994) <i>Mol Endocrinol</i> 5(2):256-66.							
	* .	HORSPOOL JH et al., Nucleic acid vaccine-induced immune responses require CD28 costimulation and are regulated by CTLA4. (1998) J. Immunol, 160, 2706-2714.							
	*	IGUCHI-ARIGA SM and Shaffner W, CpG methylation of the cAMP-responsive enhancer/promoter sequence TGACGTCA abolishes specific factor binding as well as transcriptional activation. <i>Genes Dev</i> (1989) 3(5):612-9.							
	*	ISHIKAWA R et al., IFN induction and associated changes in splenic leukocyte distribution. J Immunol (1993) 150(9):3713-27.							
	*	IVERSON, P., et al., "Pharmacokinetics of an Antisense Phosphorothioate Oligodeoxynucleotide against rev from Human Immunodeficiency Virus Type 1 in the Adult male Rate Following Single Injections and Continuous Infusion", Antisense Research and Development, (1994) 4:43-52.							
	*	JAKWAY JP et al., Growth regulation of the B lymphoma cell line WEHI-231 by anti-immunoglobulin, lipopolysaccharide, and other bacterial products. <i>J Immunol</i> (1986) 137(7):2225-31.							
	*	JAROSZEWSKI JW and Cohen JS, Cellular uptake of antisense oligonucleotides. Adv Drug Delivery Rev (1991) 6(3):235-50.							
	*	JONES TR et al., Synthetic oligonucleotides containing CpG motifs enhance immunogenicity of a peptide malaria vaccine in Aotus monkeys. <i>Vaccine</i> (1999) 17, 3065-3071.							
	*	JUFFERMANS, N. P. et al., "CpG oligodeoxynucleotides enhance host defense during murine tuberculosis." Infect Immun 70:147-152, (2002).							
	*	KATAOKA, T. et al., Antitumor Activity of Synthetic Oligonucleotides with Sequences from cDNA Encoding Proteins of Mycobacterium bovis BCG, JPN. J. Cancer Res. (1992) 83:244.							
	*	KAWANO, K., et al., "Analysis and Regulation of interferon-gamma production by peripheral blood lymphocytes from patients with bronchial asthma", ABSTRACT, Arerugi, 43:3:482-91, (1994)	@						
	*	KIMURA Y et al., Binding of Oligoguanylate to Scavenger Receptors Is Required for Oligonucleotides to Augment NK Cell Activity and Induce IFN, J. Biochem., (1994) Vol. 116, 5:991-994.							
	*	KLINE JN et al., CpG motif oligonucleotides are effective in prevention of eosinophilic inflammation in a murine model of asthma. J Invest Med (1996) 44(7):380A.							
	*	KLINE JN et al., CpG oligonucleotides can reverse as well as prevent Th2-mediated inflammation in a murine model of asthma. J Invest Med (1997) 45(7):298A.							
	*	KLINE JN et al.,"Immune redirection by CpG oligonucleotides. Conversion of a Th2 response to a Th1 response in murine model of asthma." J. Invest Med. 45(3):282A, 1997.							

FORM PTC	)-1449/A and B (M	lodifie	ed)	APPLICATION NO.:	10/627,413	ATTY. DOCKET NO.: C1039.70079US00
	RMATION D			FILING DATE:	July 25, 2003	CONFIRMATION NO.: 3204
STAT	EMENT BY	API	PLICANT	APPLICANT:	Arthur M. Krieg, et	al.
Sheet	6	of	10	GROUP ART UNIT:	1648	EXAMINER: Le, Emily M.

C	C:4-	OTHER ART — NON PATENT LITERATURE DOCUMENTS	1 00 1
Examiner's Initials	Cite No	Include name of the author (in CAPITAL LETTERS) title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, relevant page(s), volume-issue number(s), publisher, city and/or country where published.	Translation (Y/N)
^	*	KLINMAN DM et al., CpG motifs present in bacteria DNA rapidly induce lymphocytes to secrete	
ell	1	interleukin 6, interleukin 12, and interferon gamma. Proc Natl Acad Sci USA (1996) 93(7):2879-83.	
Ψ	*	KLINMAN, D. et al., Immune Recognition of Foreign DNA: A Cure for Bioterrorism?, Immunity	<del>  </del>
1		(1999) 11:123.	
<del></del>	*		<del> </del>
- 1	<b>*</b>	KLINMAN, D. M. et al., "Repeated administration of synthetic oligodeoxynucleotides expressing	1
		CpG motifs provides long-term protection against bacterial infection. <i>Infect Immun</i> 67:5658-5663, 1999"	
	*	KLINMAN, D. M., Kamstrup, S., Verthelyi, D., Gursel, I., Ishii, K. J., Takeshita, F., and Gursel, M.	<del>  </del>
1		Activation of the innate immune system by CpG oligodeoxynucleotides: immunoprotective activity	1 1
1 '	` <b> </b>		1
<u></u>	*	and safety. Springer Semin Immunopathol 22:173-183, 2000	<del>  </del>
	1	KRIEG, A. M., et al., "CpG DNA induces sustained IL-12 expression in vivo and resistance to	1 1
		Listeria monocytogenes challenge." J Immunol 161:2428-2434, 1998.	<del>  </del>
	*	KRIEG, CpG Motifs in Bacterial DNA and Their Immune Effects, Annu. Rev. Immunol. (2002) 20:709	
<del></del>	*		+
1	1	KRIEG AM et al, A Role for Endogenous Retroviral Sequences in the Regulation of Lymphocyte	1 1
<del></del>	<del> </del>	Activation, Journal of Immunology, Vol. 143, 2448-2451 (1989)	
	*	KRIEG AM et al, The role of CpG dinuleotides in DNA vaccines, Trends in Microbiology, Vol. 6,	
	<del></del>	pp. 23-27, Jan 1998.	
1	*	KRIEG AM et al, Phosphorothioate Oligodeoxynucleotides: Antisense or Anti-Protein?, Antisense	
		Research and Development, (1995), 5:241	
	*	KRIEG AM et al., CpG DNA: A Pathogenic Factor in Systemic Lupus Erythematosus?, Journal of	1 1.
	<u> </u>	Clinical Immunology, (1995) 15:6:284-292	
	*	KRIEG AM et al., CpG motifs in bacterial DNA trigger direct B-cell activation. Nature 374:546-9,	
		1995.	
	*	KRIEG AM et al., Leukocyte Stimulation by Oligodeoxynucleotides, Applied Antisense	
{		Oligonucleotide Technology, (1998), 431-448	1 1
7	*	KRIEG AM et al., Modification of antisense phosphodiester oligodeoxynucleotides by a 5'	
1		cholesteryl moiety increases cellular association and improves efficacy, Proc. Natl. Acad. Sci.,	
1		(1993), 90:1048-1052.	1
	*	KRIEG AM et al., Oligodeoxynucleotide modifications determine the magnitude of B cell	
1		stimulation by CpG motifs. Antisense Nucleic Acid Drug Dev (1996) 6(2):133-9.	1 1
	*	KRIEG AM et al., Uptake of oligodeoxyribonucleotides by lymphoid cells is heterogeneous and	<del>                                     </del>
ŀ		inducible. Antisense Res Dev (1991) 1(2):161-71.	
	*	KRIEG AM, An innate immune defense mechanism based on the recognition of CpG motifs in	<del>                                     </del>
		microbial DNA. J Lab Clin Med (1996) 128(2):128-33.	
	*	KURAMOTO et al., Oligonucleotide Sequences Required for Natural Killer Cell Activation, Jpn. J.	<del> </del>
1		Cancer Res., (1992) 83:1128-1131.	1 1
	*	LEONARD et al., Conformation of Guanine 8-Oxoadenine Base Pairs in the Crystal Structure of	<del>                                     </del>
1	-	d(CGCGAATT(08A)GCG), Biochemistry (1992) 31(36):8415-8420.	
	*	LIPFORD, G. B. et al. "Immunostimulatory DNA: sequence-dependent production of potentially	+
1		harmful or useful cytokines." Eur J Immunol 27:3420-3426, 1997.	
	*	MACFARLANE DE and Manzel L, Antagonism of immunostimulatory CpG-oligodeoxynucleotides by	<del></del>
\\/		quinacrine, chloroquine, and structurally related compounds. J Immunol (1998) 160(3):1122-31.	
V	*	MANZEL L and Macfarlane DE, Lack of Immune Stimulation by Immobilized CpG-oligonucleotide. Antisense	
		& Nucleic Acid Drug Development, (1999) 459-464.	1 1

FORM PTO	)-1449/A and B (M	lodified)	APPLICATION NO.:	10/627,413	ATTY. DOCKET NO.: C1039.70079US00
		DISCLOSURE	FILING DATE:	July 25, 2003	CONFIRMATION NO.: 3204
STAT	EMENT BY	APPLICANT	APPLICANT:	Arthur M. Krieg, et	al.
Sheet	7	of 10	GROUP ART UNIT:	1648	EXAMINER: Le, Emily M.

		OTHER ART — NON PATENT LITERATURE DOCUMENTS	
Examiner's	Cite	Include name of the author (in CAPITAL LETTERS) title of the article (when appropriate), title of the item	Translation
Initials No		(book, magazine, journal, serial, symposium, catalog, etc.), date, relevant page(s), volume-issue number(s),	(Y/N)
	*	publisher, city and/or country where published.	<del> </del>
ell	*	MASTRANGELO MJ et al., Gene therapy for human cancer: an essay for clinicians. Seminars in	
*		Oncology (1996) 23(1):4-21.	
	1	MATSON S and Krieg AM, Nonspecific suppression of [3H]thymidine incorporation by "control"	1 1
	-	oligonucleotides. Antisense Res Dev (1992) 2(4):325-30.	<del>                                     </del>
1	*	MCINTYRE KW et al., A sense phosphorothioate oligonucleotide directed to the initiation codon of	1 1
}		transcription factor NF-kappa B p65 causes sequence-specific immune stimulation. Antisense Res	
	<u> </u>	Dev (1993) 3(4):309-22.	
	*	MESSINA et al., Stimulation of in vitro Murine Lymphocyte Proliferation by Bacterial DNA. J.	<b>!</b>
		Immunol., (1991) Vol. 147, 6:1759-1764.	ļ
1	*	MESSINA et al., The Influence of DNA Structure on the in vitro Stimulation of Murine	
		Lymphocytes by Natural and Synthetic Polynucleotide Antigens. Cellular Immunology, (1993)	1 1
		147:148-157.	<del>                                     </del>
	*	MOJCIK, C., et al., Administration of a Phosphorothioate Oligonucleotide Antisense Murine	
		Endogenous Retroviral MCF env Causes Immune Effect in vivo in a Sequence-Specific Manner,	
		Clinical Immunology and Immunopathology, (1993) 67:2:130-136.	
17	*	MOTTRAM et al., A novel CDC2-related protein kinase from leishmania mexicana LmmCRK1 is	1
U	<u> </u>	post-translationally regulated during the life cycle. J. Biol. Chem. (1993) 268:28, 21044-21052.	L
~~~	*	New England BIOLABS 1988-1989 Catalog	<del> </del>
	*	NYCE JW and Metzger WJ, DNA antisense therapy for asthma in an animal model. Nature (1997)	
ele	1	385:721-725.	1
	*	PISETSKY DS, The immunologic properties of DNA. J Immunol (1996) 156(2):421-3.	
	*	PISETSKY et al., Stimulation of Murine Lymphocyte Proliferation by a Phosphorothioate	<del> </del>
		Oligonucleotide with Antisense Activity for Herpes Simplex Virus. <i>Life Science</i> , (1994) Vol. 54, pp.	•
		101-107.	ļ
	+	PISETSKY, D., "Stimulation of in vitro proliferation of murine lymphocytes by synthetic	<del> </del>
1		oligodeoxynucleotides", Molecular Biology Repairs, (1993) 18:217-221.	
	*	PISETSKY, Immunological Consequences of Nucleic Acid Therapy, Antisense Research and	<del>                                     </del>
Ì	1	Development, (1995) 5:219-225.	i l
	*	RAZ E et al., Preferential induction of a Th1 immune response and inhibition of specific IgE	<del> </del>
j		antibody formation by plasmid DNA immunization. <i>Proc Natl Acad Sci USA</i> (1996) 93(10):5141-5.	
<del></del>	*	RICCI, M., et al., "T cells, cytokines, IgE and allergic airways inflammation", J invest Allergol Clin	<del> </del>
	'	Immunol", 4:5;214-220, (1994)	•
	*	ROMAN M et al., Immunostimulatory DNA sequences function as T helper-1-promoting adjuvants.	<del> </del>
		Nat Med (1997) 3(8):849-54.	
<del></del>	*	SATO et al., Immunostimulatory DNA Sequences Necessary for Effective Intradermal Gene	<del>                                     </del>
1		Immunization, Science, (1996) Vol. 273, pp. 352-354.	1
	*	SCHNELL et al., Identification and characterization of a Saccharomyces cerevisiae gene (PAR1)	<del>  </del>
	[		
	*	conferring resistance to iron chelators. Eur. J. Biochem., 200:487-493, Sentence / 1911	
<b>\</b>	-	SCHWARTZ DA et al., CpG motifs in bacterial DNA cause inflammation in the lower respiratory	
	*	tract. J Clin Invest (1997) 100(1):68-73.	<del> </del>
ł	•	SCHWARTZ DA et al., Endotoxin responsiveness and grain dust-induced inflammation in the lower	
<del>,-</del>	-	respiratory tract. Am J Physiol (1994) 267(5 Pt 1):L609-17.	<del>                                     </del>
	*	SCHWARTZ DA et al., The role of endotoxin in grain dust-induced lung disease. Am J Respir Crit	
		Care Med (1995) 152(2):603-8	<u> </u>

FORM PTO	-1449/A and B (M	lodifie	d)	APPLICATION NO.:	10/627,413	ATTY. DOCKET NO.: C1039.70079US00	
	RMATION D			FILING DATE: July 25, 2003 CONFIRMATION		CONFIRMATION NO.: 3204	
STAT	EMENT BY	APP	LICANT	APPLICANT:	Arthur M. Krieg, et	al.	
				GROUP ART UNIT:	1648	EXAMINER: Le, Emily M.	
Sheet	8	of	10	OROGI ARI OMI.	1040	EXAMINER. Be, Blilly W.	

Examiner's	Cite	OTHER ART — NON PATENT LITERATURE DOCUMENTS  Include name of the author (in CAPITAL LETTERS) title of the article (when appropriate), title of the item	Translation
nitials	No	(book, magazine, journal, serial, symposium, catalog, etc.), date, relevant page(s), volume-issue number(s), publisher, city and/or country where published.	(Y/N)
ell	*	SEDEGAH, M.et al. "Interleukin 12 induction of interferon g-dependent protection against malaria."  Proc Natl Acad Sci USA 91:10700-10702, 1994.	
1	*	SETHI, S. et al. "Postexposure prophylaxis against prion disease with a stimulator of innate	
+	*	immunity." Lancet 360:229-230, 2002.  SHIRAKAWA T et al., The inverse association between tuberculin responses and atopic disorder.	
	*	Science (1997) 275(5296):77-9.  SPARWASSER T et al., Macrophages sense pathogens via DNA motifs: induction of tumor necrosis	
	*	factor-alpha-mediated shock. Eur J Immunol (1997) 27(7):1671-9.  SPIEGELBERG, H., et al., "Recognition of T Cell Epitopes and Lymphokine Secretion by Rye Grass Allergen Lelium personne I Specific Human T Cell Clause". Lef Immunology, 4706, 4711, (1994)	
	*	Allergen Lolium perenne I-Specific Human T Cell Clones", <i>J of Immunology</i> , 4706-4711, (1994)  STACEY, K. J et al. "Immunostimulatory DNA as an adjuvant in vaccination against Leishmania major." <i>Infect Immun</i> 67:3719-3726, 1999.	
	*	STEIN CA et al., Oligonucleotides as inhibitors of gene expression: a review. Cancer Research, (1988) 48:2659-2668.	
	*	STULL et al., Antigene, Ribozyme, and Aptamer Nucleic Acid Drugs: Progress and Prospects,  Pharmaceutical Res., (1995) Vol. 12, 4:465-483.	
	*	SUBRAMANIAN et al., Theoretical Considerations on the "Spine of Hydration" in the Minor Groove of d(CGCGAATTCGCG) d(GCGCTTAAGCGC): Monte Carlo Computer Simulation. Proc. Nat'l. Acad. Sci. USA, (1988) 85:1836-1840.	
	*	TANAKA T et al., An antisense Oligonucleotide complementary to a sequence in IG2b increases G2b germline transcripts stimulates B cell DNA synthesis and inhibits immunoglobulin secretion. J. Exp. Med., (1992) 175:597-607.	
	*	THORNE PS., Experimental grain dust atmospheres generated by wet and dry aerosolization techniques. Am J Ind Med (1994) 25(1):109-12.	
	*	TOKUNAGA T et al., A synthetic single-stranded DNA, poly(dG,dC), induces interferon-alpha/beta and -gamma, augments natural killer activity, and suppresses tumor growth. <i>Jpn J Cancer Res</i> (1988) Jun;79(6):682-6.	·
	*	TOKUNAGA T et al., Synthetic Oligonucleotides with Particular Base Sequences form the cDNA Encoding Proteins of <i>Myobacterium bovis</i> BCG Induce Interferons and Activate Natural Killer Cells, <i>Microbiol. Immunol.</i> , (1992) Vol. 36, 1:55-66.	
	*	UHLMANN et al., Antisense Oligonucleotides: A New Therapeutic Principle. Chemical Reviews, (1990) 90:543-584.	
	*	WAGNER RW, Gene inhibition using antisense oligodeoxynucleotides. <i>Nature</i> , (1994) 372:L333-335.	
	*	WALKER, P. S. et al. "Immunostimulatory oligodeoxynucleotides promote protective immunity and provide systemic therapy for leishmaniasis via IL-12- and IFN-g-dependent mechanisms." <i>Proc Natl Acad Sci U S A</i> 96:6970-6975, 1999.	
	*	WALKER, C., et al., "Activated T Cells and Cytokines in Bronchoalveolar Lavages from Patients with Various Lung Diseases Associated with Eosinophilia", Am J Respir Crit Care Med, 150:1038-1048, (1994)	
	*	WALLACE et al., Oligonucleotide probes for the screening of recombinant DNA libraries. Methods in Enzymology, (1987) 152:432-442.	
U	*	WEISS R., Upping the Antisense Ante: Scientists bet on profits from reverse genetics. Science, (1991) 139:108-109.	

FORM PTO	)-1449/A and B (M	lodifie	d)	APPLICATION NO.:	10/627,413	ATTY. DOCKET NO.: C1039.70079US00
	RMATION D			FILING DATE: July 25, 2003 CONFIRMATION NO.: 32		CONFIRMATION NO.: 3204
STAT	EMENT BY	APP	LICANT	APPLICANT:	Arthur M. Krieg, et	al.
Sheet	9	of	10	GROUP ART UNIT:	1648	EXAMINER: Le, Emily M.

<del> </del>		OTHER ART — NON PATENT LITERATURE DOCUMENTS	Translation				
Examiner's Initials	Cite No	Include name of the author (in CAPITAL LETTERS) title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, relevant page(s), volume-issue number(s), publisher, city and/or country where published.					
ele	*	WHALEN R, DNA Vaccines for Emerging Infection Diseases: What If?, Emerging Infectious Disease, (1996) Vol. 2, 3:168-175.					
1	*	WOOLDRIDGE, JE et al., Immunostimulatory oligodeoxynucleotides containing CpG motifs enhance the efficacy of monoclonal antibody therapy of lymphoma. <i>Blood</i> , (1997)89:2994-2998.	-				
	*	WU GY et al., Receptor-mediated gene delivery and expression in vivo. J. Biol. Chem., (1988) 263:14621-14624.					
1.	*	WU-PONG S., Oligonucleotides: Opportunities for Drug Therapy and Research. <i>Pharmaceutical Technology</i> , (1994) 18:102-114.					
	*	YAMAMOTO et al., Lipofection of Synthetic Oligodeoxyribonucleotide Having a Palindromic Sequence AACGTT to Murine Splenocytes Enhances Interferon Production and Natural Killer Activity. <i>Microbiol. Immunol.</i> , (1994) Vol. 38, 10:831-836.					
	*	YAMAMOTO S et al., DNA from bacteria, but not from vertebrates, induces interferons, activates natural killer cells and inhibits tumor growth. <i>Microbiol Immunol</i> (1992) 36(9):983-97.					
	*	YAMAMOTO S et al., <i>In vitro</i> augmentation of natural killer cell activity and production of interferon-alpha/beta and -gamma with deoxyribonucleic acid fraction from <i>Mycobacterium bovis</i> BCG. <i>Jpn J Cancer Res</i> (1988) 79:866-73.					
	*	YAMAMOTO S et al., Unique Palindromic Sequences in Synthetic Oligonucleotides are Required to Induce INF and Augment INF-Mediated Natural Killer Activity. J. Immunol., (1992) Vol. 148, 12:4072-4076.					
	*	YAMAMOTO S., Mode of Action of Oligonucleotide Fraction Extracted from Mycobacterium bovis BCG, Kekkaku, (1994) Vol. 69, 9:29-32.					
	*	YAMAMOTO T et al., Ability of Oligonucleotides with Certain Palindromes to Induce Interferon Production and Augment Natural Killer Cell Activity is Associated with Their Base Length.  Antisense Res. and Devel., (1994) 4:119-123.					
	*	YAMAMOTO T et al., Synthetic Oligonucleotides with Certain Palindromes Stimulate Interferon Production of Human Peripheral Blood Lymphocytes in vitro. Jpn. J. Cancer Res., (1994) 85:775-779.					
	*	YI, Ae-Kyung et al., Rapid Immune Activation by CpG Motifs in Bacterial DNA, <i>J Immunol</i> , (1996) 157:5394-5402.					
	*	YI, A-K et al., IFN-y promotes IL-6 and IgM secretion in response to CpG motifs in bacterial DNA and oligonucleotides, <i>J Immunol</i> (1996)156(2):558-64.					
	*	ZELPHATI, O.et al., Inhibition of HIV-1 Replication in Cultured Cells with Antisense Oligonucleotides Encapsulated in Immunoliposomes, Antisense Research and Development (1993) 3:323.					
	*	ZHAO Q et al., Comparison of cellular binding and uptake of antisense phosphodiester, phosphorothioate, and mixed phosphorothioate and methylphosphonate oligonucleotides. <i>Antisense Res Dev</i> (1993).					
()	*	ZHAO Q et al., Stage-specific oligonucleotide uptake in murine bone marrow B-cell precursors.  Blood (1994) 84(11):3660-6.					

FORM PTC	)-1449/A and B (M	lodifie	d)	APPLICATION NO.:	10/627,413	ATTY. DOCKET NO.: C1039.70079US00	
ĺ	RMATION D			FILING DATE:	July 25, 2003	CONFIRMATION NO.: 3204	
STAT	EMENT BY	APP	PLICANT	APPLICANT:	Arthur M. Krieg, et al.		
Sheet 10 of 10		GROUP ART UNIT:	1648	EXAMINER: Le, Emily M.			

Examiner's	Cite	Include name of the author (in CAPITAL LETTERS) title of the article (when appropriate), title of the item	Translation
Initials	. No	(book, magazine, journal, serial, symposium, catalog, etc.), date, relevant page(s), volume-issue number(s),	(Y/N)
		publisher, city and/or country where published.	
	*	ZIMMERMANN, S. et al., "CpG oligodeoxynucleotides trigger protective and curative Th1	
ole .		responses in lethal murine leishmaniasis." J Immunol 160:3627-3630, 1998.	

EXAMINER	DATE CONSIDERED ,
Comelite	618107

#EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

<sup>\*</sup>a copy of this reference is not provided as it was previously cited by or submitted to the office in one of the following prior applications, Serial No. 08/386,063, filed 02/07/95, Serial No. 08/738,652, filed 10/30/96, Serial No. 08/960,774, filed 10/30/97, Serial No. 09/630,319, filed 7/31/00, or Serial No. 10/187,489, filed 7/2/2002 relied upon for an earlier filing date under 35 U.S.C. 120 (continuation, continuation-in-part, and divisional applications).

Sheet

1

FORM PTO 1449/A and B (Modified)

INFORMATION DISCLOSURE

STATEMENT BY APPLICANT

10

of

APPLICATION NO.: 10/627,413 ATTY. DOCKET NO.: C1039.70079US00

FILING DATE: July 25, 2003 CONFIRMATION NO.:

APPLICANT: Arthur M. Krieg, et al.

GROUP ART UNIT: Not yet assigned EXAMINER: Not yet assigned Emily Le

**U.S. PATENT DOCUMENTS** 

Examiner's	Cite	U.S. Patent Document		Name of Patentee or Applicant of Cited	Date of Publication or of issue of Cited Document	
Initials	No.	Number	Kind Code	Document	MM-DD-YYYY	
c le	*	3,906,092		Hilleman et al.	09-16-1975	
1	*	5,248,670		Draper et al.	09-28-1993	
	*	5,585,479		Hoke et al.	12-17-1996	
	*	5,663,153		Hutcherson et al.	09-02-1997	
	*	5,723,335		Hutcherson et al.	03-03-1998	
	*	5,786,189		Locht et al.	07-28-1998	
	*	5,849,719		Carson et al.	12-15-1998	
	*	6,194,388	B1	Krieg et al.	02-27-2001	
	*	6,207,646	B1	Krieg et al.	03-27-2001	
	*	6,214,806	Bl	Krieg et al.	04-10-2001	
	*	6,218,371	Bl	Krieg et al.	04-17-2001	
1	*	6,225,292	BI	Raz, et al.	05/01/2001	
	*	6,239,116	BI	Krieg et al.	05-29-2001	
	*	6,339,068	B1	Krieg et al.	01-15-2002	
	*	6,406,705	B1	Davis et al.	06-18-2002	
	*	6,429,199	B1	Krieg et al.	. 08-06-2002	
	*	6,498,148	B1	Raz	12/24/2002	
	*	6,514,948	BI	Raz, et atl	02/04/2003	
	*	6,534,062	B2	Krieg, et al.	03/18/2003	
	*	6,552,006	B2	Raz et al.	04/22/2003	
	*	6,562,798	B1	Schwartz	05/13/2003	
	*	6,589,940	B1	Raz et al.	07/08/2003	
	*	6,610,661	B1	Carson et al.	08/26/2003	
	*	6,653,292	B1	Krieg et al.	11/25/2003	
	*	US 2001/0046967	Al	Van Nest	11/29/2001	
	*	US 2002/0028784	Al	Van Nest	03/07/2002	
	*	US 2002/0055477	Al	Nest	05/09/2002	
	*	US 2002/0098199	Al	Nest et al.	07/25/2002	
	*	US 2002/0107212	Al	Van Nest et al.	08/08/2002	
	*	US 2002/0142978	A1	Van Nest et al.	10/03/2002	
	*	US 2002/0156033	Al	Raz et al.	10/24/2002	
	*	US 2003/0049266	Ai	Bratzler et al.	03/13/2003	
	*	US 2003/0050263	A1	Fearon et al.	03/13/2003	
	*	US 2003/0078223	Al	Krieg et al.	04/24/2003	
	*	US 2003/0092663	Al	Raz et al.	05/15/2003	
	*	US 2003/0109469	Al	Raz	06/12/2003	
	*	US 2003/0119773	Al	Carson et al.	06/26/2003	
T T	*	US 2003/0129251	Al	Raz et al.	07/10/2003	

Sheet

1449/A and B (Modified)

2

INFORMATION DISCLOSURE STATEMENT BY APPLICANT

10

of

APPLICATION NO.: 10/627,413

ATTY. DOCKET NO.: C1039.70079US00

FILING DATE:

July 25, 2003

CONFIRMATION NO.:

APPLICANT:

Arthur M. Krieg, et al.

GROUP ART UNIT: Not yet assigned

EXAMINER: Not yet assigned

**U.S. PATENT DOCUMENTS** 

			<del></del>	0.5	TATENT DOCUM	
Examiner's Initials		Cite No.	U.S. Patent Document			Name of Patentee or Applicant of Cited Document
16.	*	US	2003/0133988	Al	Van Nest et al.	07/17/2003
1	*	US	2003/0143213	Al	Fearon et al.	07/31/2003
	*	US	2003/0147870 ·	Al	Raz et al.	08/07/2003
	*	US	2003/0175731	A1	Raz et al.	09/18/2003
	*	US	2003/0186921	Al	Rearon et al	10/02/2003
	*	US	2003/0199466	Al	Fearon et al.	10-23-2003
	*	US	2003/0212028	Al	Raz et al.	11-13-2003
U	*	US	2003/0216340	Al	Van Nest et al.	11-20-2003

FOREIGN PATENT DOCUMENTS

Examiner's	Cite No.	Cite Foreign Patent Document	Name of Patentee or Applicant of Cited	Date of Publication of	Translation		
Initials		Office/ Country	Number	Kind Code	Document (not necessary)	Cited Document MM-DD-YYYY	(Y/N)
ste.	*	GB	2216416A		Sandoz, Ltd.	11-10-1989	
	*	WO	91/12811		PCT	09-05-1991	
	*	EPO	0468520 A3		EPO	01-29-1992	
	*	WO	92/03456		PCT	03-05-1992	
	*	wo	92/18522		PCT	10-29-1992	
	*	WO	92/21353		PCT	12-10-1992	
	*	EPO	0302758 81		EPO	03-16-1994	
	*	wo	94/19945		PCT	09-15-1994	
	*	wo	95/05853		Regents of the University of CA	03-02-1995	
	*	wo	95/26204		PCT	10-05-1995	
	*	wo	96/02555	/	PCT	02-01-1996	
	*	wo	96/35782		Applied Research Systems	11-14-1996	
	*	wo	97/28259		PCT	08-07-1997	
	*	wo	98/14210		PCT	04-09-1998	
	*	wo	98/16247	×	Regents of the University of CA	04-231998	
	*	WO	98/18810		PCT	05-07-1998	
	*	wo	98/32462	Al	Wagner et al.	07-30-1998	
	*	wo	98/37919		PCT	09-03-1998	
	*	wo	98/40100		PCT	09-17-1998	
	*	wo	98/52581		PCT	11-26-1998	
	*	wo	98/55495	A2	Dynavax Tech. Corp.	03/11/1998	
	*	wo	99/11275	A2	Regents of the University of CA	03-11-1999	
	*	wo	99/62923	A2	Dynavax Tech. Corp ,	12/09/1999	
J)	*	wo	00/20039	Al	Regents of the University of CA	04/13/2000	

Sheet

1449/A and B (Modified)

3

## INFORMATION DISCLOSURE STATEMENT BY APPLICANT

of

10

APPLICATION NO.:	10/627,413
------------------	------------

ATTY. DOCKET NO.: C1039.70079US00

FILING DATE:

July 25, 2003

**CONFIRMATION NO.:** 

APPLICANT:

Arthur M. Krieg, et al.

GROUP ART UNIT: Not yet assigned

EXAMINER: Not yet assigned

#### FOREIGN PATENT DOCUMENTS

Examiner's Initials	Cite No.	For	eign Patent Docum	nent	Name of Patentee or Applicant of Cited Document (not necessary)	Date of Publication of Cited Document MM-DD-YYYY	Translation (Y/N)
ele	*	wo	00/21556	Al	Dynavax Tech Corp.	04/20/2000	
• [	*	wo	00/62781	Al	Regents of the University of CA	10/26/2000 .	
	*	wo	01/02007	Al	The Reagents of the Univ. of California	01-11-2001	
	*	wo	01/12804	A2	Hybridon, Inc.	02-22-2001	
	*	wo	01/12223	A2	Dynavax Tech. Corp.	02-22-2001	
	*	wo	01/55341	A2	The Reagents of the Univ. of California	08-02-2001	
	*	wo	01/68117	A2	Dynavax Tech. Corp.	09-20-2001	
	*	WO	01/68116	A2	Dynavax Tech. Corp.	09-20-2001	
	*	wo	01/68078	A2	Dynavax Tech. Corp.	09-20-2001	
	*	wo	01/68077	A2	Dynavax Tech. Corp.	09-20-2001	
U	*	wo	01/68103	A2	Dynavax Tech. Corp.	09-20-2001	

Examiner's	Cite	Include name of the author (in CAPITAL LETTERS) title of the article (when appropriate), title of the item	Translation		
Initials	No	(book, magazine, journal, serial, symposium, catalog, etc.), date, relevant page(s), volume-issue number(s), publisher, city and/or country where published.			
	*	ADYA N et al., Expansion of CREB's DNA recognition specificity by Tax results from interaction			
. 0.		with Ala-Ala-Arg at positions 282-284 near the conserved DNA-binding domain of CREB. Proc	1		
<u>lle</u>		Natl Acad Sci USA (1994) 91(12):5642-6.			
1	*	AGRAWAL, et al., Pharmacokinetics of Antisense Oligonucleotides, Clin. Pharmacokinet (1995) 28(1):7.			
	*	ANDERSON, G., et al. "TH2 and 'TH2-like' cells in allergy and asthma; pharmacological perspectives", <i>TiPS</i> , 15:324-332, (1994)			
	*	ANGIER, N., Microbe DNA Seen as Alien By Immune System, New York Times, 4/11/95.			
	*	AZAD RF et al., Antiviral Activity of a Phosphorothioate Oligonucleotide Complementary to RNA			
		of the Human Cytomegalovirus Major Immediate-Early Region, Antimicrobial Agents and Chemotherapy, 37:1945-1954, September, 1993.			
	*	AZUMA, Biochemical and Immunological Studies on Cellular Components of Tubercle Bacilli, Kekkaku, (1992) Vol. 69, 9:45-55.			
	*	BALLAS ZK et al., Induction of NK activity in murine and human cells by CpG motifs in oligodeoxynucleotides and bacterial DNA. <i>J Immunol</i> (1996) 157(5):1840-5.			
	•	BAYEVER, E., Systemic Administration of a Phosphorothioate Oligonucleotide with a Sequence Complementary to p53 for Acute Myelogenous leukemia and Myelodysplastic Syndrome: Initial Results of a Phase I Trial, Antisense Res. & Dev. (1993), 3:383-390.			
	*	BENNETT RM et al., DNA binding to human leukocytes. Evidence for a receptor-mediated association, internalization, and degradation of DNA. (1985) J Clin Invest 76(6):2182-90.	·		
	*	BERG DJ et al., Interleukin-10 is a central regulator of the response to LPS in murine models of endotoxic shock and the Shwartzman reaction but not endotoxin tolerance. <i>J Clin Invest</i> (1995) 96(5):2339-47.			
	*	BLANCHARD DK et al., Interferon-gamma induction by lipopolysaccharide: dependence on interleukin 2 and macrophages. <i>J Immunol</i> (1986) 136(3):963-70.			
U	*	BLAXTER et al., Genes expressed in Brugia malayi infective third stage larvae. Molecular and Biochemical Parasitology, 77:77-93.			

Sheet

ORM PTO: 449/A and B (Modified)

4

# INFORMATION DISCLOSURE STATEMENT BY APPLICANT

10

of

ATTY. DOCKET NO.: C1039.70079US00

FILING DATE:

July 25, 2003

CONFIRMATION NO.:

APPLICANT:

Arthur M. Krieg, et al.

GROUP ART UNIT: Not yet assigned

EXAMINER: Not yet assigned

<del> </del>		OTHER ART — NON PATENT LITERATURE DOCUMENTS	T 55	
Examiner's	Cite	Include name of the author (in CAPITAL LETTERS) title of the article (when appropriate), title of the item	Translation	
Initials	No	(book, magazine, journal, serial, symposium, catalog, etc.), date, relevant page(s), volume-issue number(s),	(Y/N)	
1	*	publisher, city and/or country where published.		
ele	*	BOGGS RT et al., Characterization and modulation of immune stimulation by modified	1 1	
exe	1	oligonucleotides. Antisense Nucleic Acid Drug Dev (1997) 7(5):461-71.	<del>                                     </del>	
-	*	BRANDA et al., Immune Stimulation by an Antisense Oligomer Complementary to the rev gene of	1 1	
	ļ	HIV-1, Biochemical Pharmacology, (1993) Vol. 45, 10:2037-2043.		
1	*	BRANDA RF et al., Amplification of antibody production by phosphorothioate		
	ļ	oligodeoxynucleotides, J. Lab Clin Med (1996) 128(3):329-38.	1	
j	*	BRISKIN M et al., Lipopolysaccharide-unresponsive mutant pre-B-cell lines blocked in NF-kappa B		
		activation, (1990) Mol Cell Biol 10(1):422-5.		
- 1	*	CHACE, J. et al., Regulation of Differentiation in CD5+ and Conventional B Cells, Clinical	1	
		Immunology and Immunopathology, (1993) 68:3:327-332.		
1	*	CHANG YN et al., The palindromic series I repeats in the simian cytomegalovirus major immediate-		
- 1		early promoter behave as both strong basal enhancers and cyclic AMP response elements, J Virol	1 1	
		(1990) 64(1):264-77.		
	*	CHU RS et al., CpG oligodeoxynucleotides act as adjuvants that switch on T helper 1 (Th1)		
		immunity, (1997) J Exp Med 186(10):1623-31		
	*	COSSUM et al., Pharmacokinetics of a 14C-Labeled Phosphorothioate Oligonucleotide, ISIS 2105,		
		after Intradermal Administration to Rats, J Pharmacol Exp Therapeutics (1993) 269(1):89.	[ ]	
	*	COWDERY JS et al., Bacterial DNA induces NK cells to produce IFN-gamma in vivo and increases		
		the toxicity of lipopolysaccharides, J Immunol (1996) 156(12):4570-5.		
	*	CROSBY et al., The Early Responses Gene FGFI-C Encodes a Zinc Finger Transcriptional Activator		
1		and is a Member of the GCGGGGCG (GSG) Element-Binding Protein Family, Mol. Cell. Biol.		
İ		(1991) 2:3835-3841.		
	*	CRYSTAL, Transfer of Genes to Humans: Early Lessons and Obstacles to Success. Science, (1995)		
ı		Vol. 270, pp. 404-410.		
1	*	D'ANDREA A et al., Interleukin 10 (IL-10) inhibits human lymphocyte interferon	<del>  </del>	
1		gamma-production by suppressing natural killer cell stimulatory factor/IL-12 synthesis in accessory		
1		cells, J Exp Med (1993) 178(3):1041-8.		
	*	ELKINS, K. L., Rhinehart-Jones, T. R., et al., "Bacterial DNA containing CpG motifs stimulates	<del>                                     </del>	
1		lymphocyte-dependent protection of mice against lethal infection with intracellular bacteria." J	1	
l l		Immunol 162:2291-2298, 1999.	-	
	*	ENGLISCH et al., Chemically Modified Oligonucleotides as Probes and Inhibitors, Angew. Chem.	<del>                                     </del>	
1		Int. Ed. Engl (1991) 30:613-629.		
<del></del>	*	ERB KJ et al., Infection of mice with Mycobacterium bovis-Bacillus Calmette-Guerin (BCG)	<del>                                     </del>	
	<u> </u>	suppresses allergen- induced airway eosinophilia, <i>J Exp Med</i> (1998) 187(4):561-9		
	*	ETLINJER, Carrier sequence selection - one key to successful vaccines, <i>Immunology Today</i> , (1992)	<del>                                     </del>	
		Vol. 13, 2:52-55.		
	*	FOX RI, Mechanism of action of hydroxychloroquine as an antirheumatic drug. Chemical Abstracts,	<del>                                     </del>	
1		(1994) 120:15, Abstract No. 182630.		
<del></del>	*	FREIDAG, B. L et al., "CpG oligodeoxynucleotides and interleukin-12 improve the efficacy of	<del>  -</del>	
1	"	Mycobacterium bovis BCG vaccination in mice challenged with M. tuberculosis.: Infect Immun		
j		68:2948-2953, 2000.		
<del></del>	*	GAO, W-Y et al., Phosphorothioate oligonucleotides are inhibitors of human DNA polymerases and	<del> </del>	
1	*	Dans II. In all assigns for artisans to basical Mol. Pharmage. (1992) 41, 222, 229		
<del></del> -	<del> </del>	Rnase H: Implications for antisense technology. Mol. Pharmacol. (1992), 41, 223-229.	<del>  </del>	
	*	GURA, T., Antisense Has Growing Pains. Science (1995), 270:575-576.		
$\mathbf{G}$	*	HADDEN J et al., Immunopharmacology, JAMA, (1992) 268:20:2964-2969.	1 1	

5

Sheet

9/A and B (Modified)

### INFORMATION DISCLOSURE STATEMENT BY APPLICANT

of

10

ATTY. DOCKET NO.: C1039.70079US00

FILING DATE:

July 25, 2003

**CONFIRMATION NO.:** 

APPLICANT:

Arthur M. Krieg, et al.

GROUP ART UNIT: Not yet assigned 16 48

EXAMINER: Not yet assigned

Examiner's	Cite	Include name of the author (in CAPITAL LETTERS) title of the article (when appropriate), title of the item	Translation
Initials	No	(book, magazine, journal, serial, symposium, catalog, etc.), date, relevant page(s), volume-issue number(s).	(Y/N)
	publisher, city and/or country where published.		(1/14)
ele	*	HADDEN J et al., Immunostimulants. TIPS, (1993), 141:169-174.	
*		<u> </u>	
. 1	Time Extra Mo et al., bacterial bitte induces marine interferon-gamina production by simulation		
	*	interleukin-12 and tumor necrosis factor-alpha. Cell Immunol (1996) 167(1):72-8.	
1	-	HATZFELD J., Release of Early Human Hematopoietic Progenitors from Quiescence by Antisense	
	*	Transforming Growth Factor β1 or Rb Oligonucleotides, J. Exp. Med., (1991) 174:925-929.	
•	<b>T</b>	HAYASHI, T.et al., "Enhancement of innate immunity against Mycobacterium avium infection by	1
l	ł	immunostimulatory DNA is mediated by indoleamine 2,3-dioxygenase." Infect Immun 69:6156-	
		6164, 2001.	
	*	HIGHFIELD PE, Sepsis: the More, the Murkier. Biotechnology, (1994) 12:828.	
ļ	*	HOEFFLER JP et al., Identification of multiple nuclear factors that interact with cyclic adenosine	
į	1	3',5'-monophosphate response element-binding protein and activating transcription factor-2 by	
		protein-protein interactions., (1994) Mol Endocrinol 5(2):256-66.	
1	<b>  *</b>	HORSPOOL JH et al., Nucleic acid vaccine-induced immune responses require CD28 costimulation	
		and are regulated by CTLA4. (1998) J. Immunol, 160, 2706-2714.	
1	*	IGUCHI-ARIGA SM and Shaffner W, CpG methylation of the cAMP-responsive enhancer/promoter	
İ		sequence TGACGTCA abolishes specific factor binding as well as transcriptional activation. Genes	
		Dev (1989) 3(5):612-9.	
	*	ISHIKAWA R et al., IFN induction and associated changes in splenic leukocyte distribution. J	
l	1	Immunol (1993) 150(9):3713-27.	
	*	IVERSON, P., et al., "Pharmacokinetics of an Antisense Phosphorothioate Oligodeoxynucleotide	
l		against rev from Human Immunodeficiency Virus Type I in the Adult male Rate Following Single	
		Injections and Continuous Infusion", Antisense Research and Development, (1994) 4:43-52.	
	*	JAKWAY JP et al., Growth regulation of the B lymphoma cell line WEHI-231 by	
1		anti-immunoglobulin, lipopolysaccharide, and other bacterial products. J Immunol (1986)	1
1		137(7):2225-31.	
	*	JAROSZEWSKI JW and Cohen JS, Cellular uptake of antisense oligonucleotides. Adv Drug	
		Delivery Rev (1991) 6(3):235-50.	
	*	JONES TR et al., Synthetic oligonucleotides containing CpG motifs enhance immunogenicity of a	
		peptide malaria vaccine in Aotus monkeys. Vaccine (1999) 17, 3065-3071.	
	*	JUFFERMANS, N. P. et al., "CpG oligodeoxynucleotides enhance host defense during murine	
		tuberculosis." Infect Immun 70:147-152, 2002.	
	*	KATAOKA, T. et al., Antitumor Activity of Synthetic Oligonucleotides with Sequences from cDNA	
		Encoding Proteins of Mycobacterium bovis BCG, JPN. J. Cancer Res. (1992) 83:244.	
	*	KAWANO, K., et al., "Analysis and Regulation of interferon-gamma production by peripheral blood	
		lymphocytes from patients with bronchial asthma", ABSTRACT, Arerugi, 43:3:482-91, (1994)	
	*	KIMURA Y et al., Binding of Oligoguanylate to Scavenger Receptors Is Required for	
1		Oligonucleotides to Augment NK Cell Activity and Induce IFN, J. Biochem., (1994) Vol. 116, 5:991-	
		994.	
	*	KLINE JN et al., CpG motif oligonucleotides are effective in prevention of eosinophilic	
		inflammation in a murine model of asthma. J Invest Med (1996) 44(7):380A.	
	*	KLINE JN et al., CpG oligonucleotides can reverse as well as prevent Th2-mediated inflammation in	
		a murine model of asthma. J Invest Med (1997) 45(7):298A.	
, 11	*	KLINE JN et al.,"Immune redirection by CpG oligonucleotides. Conversion of a Th2 response to a	
Th1 response in murine model of asthma." J. Invest Med. 45(3):282A, 1997.			

JAN 1 4 2004 E

Sheet

RALPTQ 199/A and B (Modified)

\*

### INFORMATION DISCLOSURE STATEMENT BY APPLICANT

10

of

APPLICATION NO.	: 10/627,413	ATTY. DOCKET NO.: C1039.70079US00
FILING DATE:	July 25, 2003	CONFIRMATION NO.:

APPLICANT: Arthur M. Krieg, et al.

OTHER ART — NON PATENT LITERATURE DOCUMENTS

GROUP ART UNIT: Not yet assigned EXAMINER: Not yet assigned 1648. Em. 19

Include name of the author (in CAPITAL LETTERS) title of the article (when appropriate), title of the item Examiner's Cite Translation Initials No (book, magazine, journal, serial, symposium, catalog, etc.), date, relevant page(s), volume-issue number(s), (Y/N) publisher, city and/or country where published. KLINMAN DM et al., CpG motifs present in bacteria DNA rapidly induce lymphocytes to secrete elo interleukin 6, interleukin 12, and interferon gamma. Proc Natl Acad Sci USA (1996) 93(7):2879-83. KLINMAN, D. et al., Immune Recognition of Foreign DNA: A Cure for Bioterrorism?, Immunity (1999) 11:123. KLINMAN, D. M. et al., "Repeated administration of synthetic oligodeoxynucleotides expressing CpG motifs provides long-term protection against bacterial infection. Infect Immun 67:5658-5663, KLINMAN, D. M., Kamstrup, S., Verthelyi, D., Gursel, I., Ishii, K. J., Takeshita, F., and Gursel, M. Activation of the innate immune system by CpG oligodeoxynucleotides: immunoprotective activity and safety. Springer Semin Immunopathol 22:173-183, 2000 KRIEG, A. M., et al., "CpG DNA induces sustained IL-12 expression in vivo and resistance to Listeria monocytogenes challenge." J Immunol 161:2428-2434, 1998. KRIEG, CpG Motifs in Bacterial DNA and Their Immune Effects, Annu. Rev. Immunol. (2002) KRIEG AM el al, A Role for Endogenous Retroviral Sequences in the Regulation of Lymphocyte \* Activation, Journal of Immunology, Vol. 143, 2448-2451, 1989 KRIEG AM et al, The role of CpG dinuleotides in DNA vaccines, Trends in Microbiology, Vol. 6, pp. 23-27, Jan 1998. KRIEG AM et al, Phosphorothioate Oligodeoxynucleotides: Antisense or Anti-Protein?, Antisense Research and Development, (1995), 5:241 KRIEG AM et al., CpG DNA: A Pathogenic Factor in Systemic Lupus Erythematosus?, Journal of Clinical Immunology, (1995) 15:6:284-292 KRIEG AM et al., CpG motifs in bacterial DNA trigger direct B-cell activation. Nature 374:546-9, 1995. KRIEG AM et al., Leukocyte Stimulation by Oligodeoxynucleotides, Applied Antisense Oligonucleotide Technology, (1998), 431-448 KRIEG AM et al., Modification of antisense phosphodiester oligodeoxynucleotides by a 5' cholesteryl moiety increases cellular association and improves efficacy, Proc. Natl. Acad. Sci., (1993), 90:1048-1052. KRIEG AM et al., Oligodeoxynucleotide modifications determine the magnitude of B cell stimulation by CpG motifs. Antisense Nucleic Acid Drug Dev (1996) 6(2):133-9. KRIEG AM et al., Uptake of oligodeoxyribonucleotides by lymphoid cells is heterogeneous and inducible. Antisense Res Dev (1991) 1(2):161-71. KRIEG AM. An innate immune defense mechanism based on the recognition of CpG motifs in \* microbial DNA. J Lab Clin Med (1996) 128(2):128-33. KURAMOTO et al., Oligonucleotide Sequences Required for Natural Killer Cell Activation, Jpn. J. Cancer Res., (1992) 83:1128-1131. LAGRANGE et al., Immune Responses Directed Against Infectious and Parasitic Agents, Principle \* Types of Immune Responses. LEONARD et al., Conformation of Guanine 8-Oxoadenine Base Pairs in the Crystal Structure of d(CGCGAATT(08A)GCG), Biochemistry (1992) 31(36):8415-8420.

LIPFORD, G. B. et al. "Immunostimulatory DNA: sequence-dependent production of potentially

MANZEL L and Macfarlane DE, Lack of Immune Stimulation by Immobilized CpG-oligonucleotide. Antisense

MACFARLANE DE and Manzel L, Antagonism of immunostimulatory CpG-oligodeoxynucleotides by

quinacrine, chloroquine, and structurally related compounds. J Immunol (1998) 160(3):1122-31.

harmful or useful cytokines." Eur J Immunol 27:3420-3426, 1997.

& Nucleic Acid Drug Development, (1999) 459-464.

Sheet

FORMATION 449/A and B (Modified)

APPLICATION NO.: 10/627,413

ATTY. DOCKET NO.: C1039.70079US00

INFORMATION DISCLOSURE STATEMENT BY APPLICANT

of

10

FILING DATE: July 25, 2003

**CONFIRMATION NO.:** 

APPLICANT:

Arthur M. Krieg, et al.

GROUP ART UNIT: Not yet assigned

EXAMINER: Not yet assigned

		OTHER ART — NON PATENT LITERATURE DOCUMENTS	
Examiner's Initials	Cite No	Include name of the author (in CAPITAL LETTERS) title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, relevant page(s), volume-issue number(s), publisher, city and/or country where published.	Translation (Y/N)
ele	*	MASTRANGELO MJ et al., Gene therapy for human cancer: an essay for clinicians. Seminars in Oncology (1996) 23(1):4-21.	
1	*	MATSON S and Krieg AM, Nonspecific suppression of [3H]thymidine incorporation by "control" oligonucleotides. Antisense Res Dev (1992) 2(4):325-30.	
	*	MCINTYRE KW et al., A sense phosphorothioate oligonucleotide directed to the initiation codon of transcription factor NF-kappa B p65 causes sequence-specific immune stimulation. <i>Antisense Res Dev</i> (1993) 3(4):309-22.	
	*	MESSINA et al., Stimulation of in vitro Murine Lymphocyte Proliferation by Bacterial DNA. J. Immunol., (1991) Vol. 147, 6:1759-1764.	
	*	MESSINA et al., The Influence of DNA Structure on the <i>in vitro</i> Stimulation of Murine Lymphocytes by Natural and Synthetic Polynucleotide Antigens. <i>Cellular Immunology</i> , (1993) 147:148-157.	
	*	MOJCIK, C., et al., Administration of a Phosphorothioate Oligonucleotide Antisense Murine Endogenous Retroviral MCF env Causes Immune Effect in vivo in a Sequence-Specific Manner, Clinical Immunology and Immunopathology, (1993) 67:2:130-136.	
U	*	MOTTRAM et al., A novel CDC2-related protein kinase from leishmania mexicana LmmCRK1 is post-translationally regulated during the life cycle. J. Biol. Chem. (1993) 268:28, 21044-21052.	
~~	*	New England-BIOLABS 1988-1989 Catalog	
ele	*	NYCE JW and Metzger WJ, DNA antisense therapy for asthma in an animal model. <i>Nature</i> (1997) 385:721-725.	
1	*	PISETSKY DS, The immunologic properties of DNA. J Immunol (1996) 156(2):421-3.	
	*	PISETSKY et al., Stimulation of Murine Lymphocyte Proliferation by a Phosphorothioate Oligonucleotide with Antisense Activity for Herpes Simplex Virus. <i>Life Science</i> , (1994) Vol. 54, pp. 101-107.	
	*	PISETSKY, D., "Stimulation of in vitro proliferation of murine lymphocytes by synthetic oligodeoxynucleotides", <i>Molecular Biology Repairs</i> , (1993) 18:217-221.	
	*	PISETSKY, Immunological Consequences of Nucleic Acid Therapy, Antisense Research and Development, (1995) 5:219-225.	
	*	RAZ E et al., Preferential induction of a Th1 immune response and inhibition of specific IgE antibody formation by plasmid DNA immunization. <i>Proc Natl Acad Sci USA</i> (1996) 93(10):5141-5.	
	*	RICCI, M., et al., "T cells, cytokines, IgE and allergic airways inflammation", J invest Allergol Clin Immunol", 4:5;214-220, (1994)	
	*	ROMAN M et al., Immunostimulatory DNA sequences function as T helper-1-promoting adjuvants.  Nat Med (1997) 3(8):849-54.	
	*	SATO et al., Immunostimulatory DNA Sequences Necessary for Effective Intradermal Gene Immunization, Science, (1996) Vol. 273, pp. 352-354.	
	*	SCHNELL et al., Identification and characterization of a Saccharomyces cerevisiae gene (PARI) conferring resistance to iron chelators. Eur. J. Biochem., 200:487-493, September 1991	
	*	SCHWARTZ DA et al., CpG motifs in bacterial DNA cause inflammation in the lower respiratory tract, J Clin Invest (1997) 100(1):68-73.	
	*	SCHWARTZ DA et al., Endotoxin responsiveness and grain dust-induced inflammation in the lower respiratory tract. Am J Physiol (1994) 267(5 Pt 1):L609-17.	
IJ	*	SCHWARTZ DA et al., The role of endotoxin in grain dust-induced lung disease. Am J Respir Crit Care Med (1995) 152(2):603-8	

JAN 1 4 7004 EEEE COLOR PROPERTY PROPERTY PROPERTY PROPERTY PROPERTY PROPERTY PROPERTY PROPERTY PROPERTY PROPERTY PROPERTY PROPERTY PROPERTY PROPERTY PROPERTY PROPERTY PROPERTY PROPERTY PROPERTY PROPERTY PROPERTY PROPERTY PROPERTY PROPERTY PROPERTY PROPERTY PROPERTY PROPERTY PROPERTY PROPERTY PROPERTY PROPERTY PROPERTY PROPERTY PROPERTY PROPERTY PROPERTY PROPERTY PROPERTY PROPERTY PROPERTY PROPERTY PROPERTY PROPERTY PROPERTY PROPERTY PROPERTY PROPERTY PROPERTY PROPERTY PROPERTY PROPERTY PROPERTY PROPERTY PROPERTY PROPERTY PROPERTY PROPERTY PROPERTY PROPERTY PROPERTY PROPERTY PROPERTY PROPERTY PROPERTY PROPERTY PROPERTY PROPERTY PROPERTY PROPERTY PROPERTY PROPERTY PROPERTY PROPERTY PROPERTY PROPERTY PROPERTY PROPERTY PROPERTY PROPERTY PROPERTY PROPERTY PROPERTY PROPERTY PROPERTY PROPERTY PROPERTY PROPERTY PROPERTY PROPERTY PROPERTY PROPERTY PROPERTY PROPERTY PROPERTY PROPERTY PROPERTY PROPERTY PROPERTY PROPERTY PROPERTY PROPERTY PROPERTY PROPERTY PROPERTY PROPERTY PROPERTY PROPERTY PROPERTY PROPERTY PROPERTY PROPERTY PROPERTY PROPERTY PROPERTY PROPERTY PROPERTY PROPERTY PROPERTY PROPERTY PROPERTY PROPERTY PROPERTY PROPERTY PROPERTY PROPERTY PROPERTY PROPERTY PROPERTY PROPERTY PROPERTY PROPERTY PROPERTY PROPERTY PROPERTY PROPERTY PROPERTY PROPERTY PROPERTY PROPERTY PROPERTY PROPERTY PROPERTY PROPERTY PROPERTY PROPERTY PROPERTY PROPERTY PROPERTY PROPERTY PROPERTY PROPERTY PROPERTY PROPERTY PROPERTY PROPERTY PROPERTY PROPERTY PROPERTY PROPERTY PROPERTY PROPERTY PROPERTY PROPERTY PROPERTY PROPERTY PROPERTY PROPERTY PROPERTY PROPERTY PROPERTY PROPERTY PROPERTY PROPERTY PROPERTY PROPERTY PROPERTY PROPERTY PROPERTY PROPERTY PROPERTY PROPERTY PROPERTY PROPERTY PROPERTY PROPERTY PROPERTY PROPERTY PROPERTY PROPERTY PROPERTY PROPERTY PROPERTY PROPERTY PROPERTY PROPERTY PROPERTY PROPERTY PROPERTY PROPERTY PROPERTY PROPERTY PROPERTY PROPERTY PROPERTY PROPERTY PROPERTY PROPERTY PROPERTY PROPERTY PROPERTY PROPERTY PROPERTY PROPERTY PROPERTY PROPERTY PROPERTY PROPERTY PROPERTY PROPERTY PROPERTY PROPERTY PROPERTY PROPERTY PROPER

8

Sheet

# INFORMATION DISCLOSURE STATEMENT BY APPLICANT

10

of

APPLICATION NO.: 10/627,413 ATTY. DOCKET NO.: C1039.70079US00

FILING DATE: July 25, 2003 CONFIRMATION NO.:

APPLICANT: Arthur M. Krieg, et al.

GROUP ART UNIT: Not yet assigned EXAMINER: Not yet assigned

	T =:	OTHER ART — NON PATENT LITERATURE DOCUMENTS	·
Examiner's	Cite	Include name of the author (in CAPITAL LETTERS) title of the article (when appropriate), title of the item	Translation
Initials	No	(book, magazine, journal, serial, symposium, catalog, etc.), date, relevant page(s), volume-issue number(s),	(Y/N)
	<b></b>	publisher, city and/or country where published.	
0.	*	SEDEGAH, M.et al. "Interleukin 12 induction of interferon g-dependent protection against malaria."	
ele		Proc Natl Acad Sci U S A 91:10700-10702, 1994.	
	*	SETHI, S. et al. "Postexposure prophylaxis against prion disease with a stimulator of innate	1
	1.	immunity." Lancet 360:229-230, 2002.	
	*	SHIRAKAWA T et al., The inverse association between tuberculin responses and atopic disorder.	
• 1		Science (1997) 275(5296):77-9.	
	*	SPARWASSER T et al., Macrophages sense pathogens via DNA motifs: induction of tumor necrosis	
l		factor-alpha-mediated shock. Eur J Immunol (1997) 27(7):1671-9.	1
	*	SPIEGELBERG, H., et al., "Recognition of T Cell Epitopes and Lymphokine Secretion by Rye Grass	<del>  </del>
		Allergen Lolium perenne I-Specific Human T Cell Clones", J of Immunology, 4706-4711, (1994)	
	*	STACEY, K. J et al. "Immunostimulatory DNA as an adjuvant in vaccination against Leishmania	
	1	major." Infect Immun 67:3719-3726, 1999.	
	*	STEIN CA et al., Oligonucleotides as inhibitors of gene expression: a review. Cancer Research,	-
İ	•		
	<del> </del>	(1988) 48:2659-2668.	<del> </del>
ŀ	*	STULL et al., Antigene, Ribozyme, and Aptamer Nucleic Acid Drugs: Progress and Prospects,	
	<del> </del>	Pharmaceutical Res., (1995) Vol. 12, 4:465-483.	
	*	SUBRAMANIAN et al., Theoretical Considerations on the "Spine of Hydration" in the Minor	
		Groove of d(CGCGAATTCGCG) d(GCGCTTAAGCGC): Monte Carlo Computer Simulation.	
		Proc. Nat'l. Acad. Sci. USA, (1988) 85:1836-1840.	
1	*	TANAKA T et al., An antisense Oligonucleotide complementary to a sequence in IG2b increases	
		G2b germline transcripts stimulates B cell DNA synthesis and inhibits immunoglobulin secretion. J.	
		Exp. Med., (1992) 175:597-607.	
	*	THORNE PS., Experimental grain dust atmospheres generated by wet and dry aerosolization	
		techniques. Am J Ind Med (1994) 25(1):109-12.	
	*	TOKUNAGA T et al., A synthetic single-stranded DNA, poly(dG,dC), induces interferon-alpha/beta	
	İ	and -gamma, augments natural killer activity, and suppresses tumor growth. Jpn J Cancer Res (1988)	
		Jun;79(6):682-6.	ŀ
	*	TOKUNAGA T et al., Synthetic Oligonucleotides with Particular Base Sequences form the cDNA	
1		Encoding Proteins of Myobacterium bovis BCG Induce Interferons and Activate Natural Killer Cells,	
l l		Microbiol. Immunol., (1992) Vol. 36, 1:55-66.	
- 1	*	UHLMANN et al., Antisense Oligonucleotides: A New Therapeutic Principle. Chemical Reviews,	<del></del>
1		(1990) 90:543-584.	
<del></del>	*	WAGNER RW, Gene inhibition using antisense oligodeoxynucleotides. <i>Nature</i> , (1994) 372:L333-	<del>                                     </del>
. \		335.	
	*	WALKER, P. S. et al. "Immunostimulatory oligodeoxynucleotides promote protective immunity and	<del></del>
j	_	provide systemic therapy for leishmaniasis via 1L-12- and IFN-g-dependent mechanisms." <i>Proc Natl</i>	
l			
	<del> </del>	Acad Sci U S A 96:6970-6975, 1999.	
-	*	WALKER, C., et al., "Activated T Cells and Cytokines in Bronchoalveolar Lavages from Patients	
1		with Various Lung Diseases Associated with Eosinophilia", Am J Respir Crit Care Med, 150:1038-	
	ļ	1048, (1994)	
- 1	*	WALLACE et al., Oligonucleotide probes for the screening of recombinant DNA libraries. Methods	
		in Enzymology, (1987) 152:432-442.	
$\bigcirc$	*	WEISS R., Upping the Antisense Ante: Scientists bet on profits from reverse genetics. Science,	
		(1991) 139:108-109.	L :



Sheet

9/A and B (Modified)

9

### INFORMATION DISCLOSURE STATEMENT BY APPLICANT

of

10

APPLICATION NO	D.: 10/627,413	ATTY. DOCKET NO.: C1039.70079US00
FILING DATE:	July 25, 2003	CONFIRMATION NO.:

APPLICANT: Arthur M. Krieg, et al.

GROUP ART UNIT: Not yet assigned

		OTHER ART — NON PATENT LITERATURE DOCUMENTS		
Examiner's	Cite	Include name of the author (in CAPITAL LETTERS) title of the article (when appropriate), title of the item	Translation	
Initials	No	(book, magazine, journal, serial, symposium, catalog, etc.), date, relevant page(s), volume-issue number(s).  publisher, city and/or country where published.	r(s), (Y/N)	
Λ.	*	WHALEN R, DNA Vaccines for Emerging Infection Diseases: What If?, Emerging Infectious		
ele		Disease, (1996) Vol. 2, 3:168-175.		
· ,	*	WOOLDRIDGE, JE et al., Immunostimulatory oligodeoxynucleotides containing CpG motifs		
		enhance the efficacy of monoclonal antibody therapy of lymphoma. <i>Blood</i> , (1997)89:2994-2998.		
	*	WU GY et al., Receptor-mediated gene delivery and expression in vivo. J. Biol. Chem., (1988)		
•		263:14621-14624.		
	*	WU-PONG S., Oligonucleotides: Opportunities for Drug Therapy and Research. Pharmaceutical		
		Technology, (1994) 18:102-114.		
	*	YAMAMOTO et al., Lipofection of Synthetic Oligodeoxyribonucleotide Having a Palindromic		
1 .	1	Sequence AACGTT to Murine Splenocytes Enhances Interferon Production and Natural Killer		
		Activity. Microbiol. Immunol., (1994) Vol. 38, 10:831-836.		
	*	YAMAMOTO S et al., DNA from bacteria, but not from vertebrates, induces interferons, activates		
		natural killer cells and inhibits tumor growth. Microbiol Immunol (1992) 36(9):983-97.		
į į	*	YAMAMOTO S et al., In vitro augmentation of natural killer cell activity and production of		
1		interferon-alpha/beta and -gamma with deoxyribonucleic acid fraction from Mycobacterium bovis		
		BCG. Jpn J Cancer Res (1988) 79:866-73.		
1	*	YAMAMOTO S et al., Unique Palindromic Sequences in Synthetic Oligonucleotides are Required to		
		Induce INF and Augment INF-Mediated Natural Killer Activity. J. Immunol., (1992) Vol. 148,	İ	
		12:4072-4076.		
1	*	YAMAMOTO S., Mode of Action of Oligonucleotide Fraction Extracted from Mycobacterium bovis		
		BCG, Kekkaku, (1994) Vol. 69, 9:29-32.		
	*	YAMAMOTO T et al., Ability of Oligonucleotides with Certain Palindromes to Induce Interferon		
		Production and Augment Natural Killer Cell Activity is Associated with Their Base Length.		
		Antisense Res. and Devel., (1994) 4:119-123.		
	*	YAMAMOTO T et al., Synthetic Oligonucleotides with Certain Palindromes Stimulate Interferon		
1		Production of Human Peripheral Blood Lymphocytes in vitro. Jpn. J. Cancer Res., (1994) 85:775-		
<del></del>		779.		
1	*	YI, Ae-Kyung et al., Rapid Immune Activation by CpG Motifs in Bacterial DNA, J Immunol, (1996)		
	*	157:5394-5402.	<del> </del>	
	•	YI, A-K et al., IFN-γ promotes IL-6 and IgM secretion in response to CpG motifs in bacterial DNA		
		and oligonucleotides, J Immunol (1996)156(2):558-64.		
1	*	ZELPHATI, O.et al., Inhibition of HIV-1 Replication in Cultured Cells with Antisense		
l	}	Oligonucleotides Encapsulated in Immunoliposomes, Antisense Research and Development (1993)	ĺ	
	*	3:323.	<del></del>	
	•	ZHAO Q et al., Comparison of cellular binding and uptake of antisense phosphodiester,	-	
ı		phosphorothioate, and mixed phosphorothioate and methylphosphonate oligonucleotides. <i>Antisense</i>		
-+-	*	Res Dev (1993).  ZHAO Q et al., Stage-specific oligonucleotide uptake in murine bone marrow B-cell precursors.	<del></del>	
	-	Blood (1994) 84(11):3660-6.		

JAN 1 4 2004			
PERMPTO 1449/A and B (Modified)	APPLICATION NO.: 10/627,413 .	ATTY. DOCKET NO.: C1039.70079US00	
INFORMATION DISCLOSURE	FILING DATE: July 25, 2003	CONFIRMATION NO.:	
STATEMENT BY APPLICANT	APPLICANT: Arthur M. Krieg, et al.		
Sheet   10   of   10	GROUP ART UNIT: Not yet assigned	EXAMINER: Not yet assigned	

Examiner's	Cite	Include name of the author (in CAPITAL LETTERS) title of the article (when appropriate), title of the item	Translation	
Initials	No	(book, magazine, journal, serial, symposium, catalog, etc.), date, relevant page(s), volume-issue number(s),	(Y/N)	
		publisher, city and/or country where published.		
	*	ZIMMERMANN, S. et al., "CpG oligodeoxynucleotides trigger protective and curative Th1		
ile		responses in lethal murine leishmaniasis." J Immunol 160:3627-3630, 1998.		

EXAMINER	DATE CONSIDERED , ,
Combade.	6/18/07

#EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

[NOTE - Must provide a copy of any patent, publication, other information listed, even if it was previously submitted to, or cited by, the U.S. Patent Office in an earlier application, unless the earlier application is identified by the IDS and is relied upon for an earlier filing date under 35 U.S.C. §120, and the copy was provided in the earlier application.]

<sup>\*</sup>a copy of this reference is not provided as it was previously cited by or submitted to the office in one of the following prior applications, Serial No. 08/386,063, filed 02/07/95, Serial No. 08/738,652, filed 10/30/96, Serial No. 08/960,774, filed 10/30/97, Serial No. 09/630,319, filed 7/31/00, or Serial No. 10/187,489, filed 7/2/2002 relied upon for an earlier filing date under 35 U.S.C. 120 (continuation, continuation-in-part, and divisional applications).